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<p>(51) International classification :H01Q0001380000, H01Q0001240000, H01Q0001500000, H01Q0001520000, H01Q0021000000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : <b>1)Jetti Chandrasekhar Rao</b> Address of Applicant :Associate Professor, Department of Electronics and Communication Engineering Bapatla Engineering College, Bapatla 522102, Andhra Pradesh, India -----</p> <p><b>2)Dr. Nandanavanam Venkateswara Rao</b></p> <p><b>3)Gangineni Lavanya</b></p> <p><b>4)Eagalapati Sravani</b></p> <p><b>5)Boyalapalli John Wesley</b></p> <p><b>6)Bhuma Venkata Siva Reddy</b></p> <p><b>7)Bapatla Engineering College</b></p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : <b>1)Dr. Nandanavanam Venkateswara Rao</b> Address of Applicant :Dr. Nandanavanam Venkateswara Rao, Professor, Department of Electronics and Communication Engineering, Bapatla Engineering College, Bapatla-522102, Andhra Pradesh, India Bapatla -----</p> <p><b>2)Gangineni Lavanya</b> Address of Applicant :Gangineni Lavanya, Department of Electronics and Communication Engineering, Bapatla Engineering College, Bapatla-522102, Andhra Pradesh, India Bapatla -----</p> <p><b>3)Eagalapati Sravani</b> Address of Applicant :Eagalapati Sravani, Department of Electronics and Communication Engineering, Bapatla Engineering College, Bapatla-522102, Andhra Pradesh, India Bapatla -----</p> <p><b>4)Boyalapalli John Wesley</b> Address of Applicant :Boyalapalli John Wesley, Department of Electronics and Communication Engineering, Bapatla Engineering College, Bapatla-522102, Andhra Pradesh, India Bapatla -----</p> <p><b>5)Bhuma Venkata Siva Reddy</b> Address of Applicant :Bhuma Venkata Siva Reddy, Department of Electronics and Communication Engineering, Bapatla Engineering College, Bapatla-522102, Andhra Pradesh, India Bapatla -----</p> <p><b>6)Dr. Jetti Chandrasekhar Rao</b> Address of Applicant :Dr. Jetti Chandrasekhar Rao, Associate Professor, Department of Electronics and Communication Engineering, Bapatla Engineering College, Bapatla-522102, Andhra Pradesh, India Bapatla -----</p>
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(57) Abstract :  
The design of an elliptical millimeter-wave MIMO (multiple-input multiple-output) antenna for 5G mmWave N257/N258 and N262 band applications is disclosed in the current invention. The antenna, which measures 17 mm by 17 mm by 0.25 mm, is made of FR4 epoxy, a dielectric material with a dielectric loss tangent of 0.02 and a relative permittivity of 4.4. The four rectangular radiating elements (patch) on top of the dielectric material and the slotted ground on the bottom make up the disclosed antenna. A 50-ohm microstrip line feed is used to supply power to the radiating devices. 5mm by 1mm, with a 7.5 millimetre gap between each rectangular strip. 3.5 mm separates the edge from the rectangular segments. To improve impedance matching at 28GHz, the rectangular slots on each radiator are fused. The MIMO antenna radiators are likewise positioned orthogonally to each other in order to enhance port isolation. With isolation S11 of -45 dB and S12 of 30.9 dB, the planned antenna operates at 28 GHz between 28.7 and 27.3 GHz. There is also a respectable radiation efficiency (80%) and a strong peak gain (4.2 dBi). At 28GHz, the rectangular slots of each radiator are fused to improve impedance matching. The MIMO antenna radiators are likewise positioned orthogonally to each other in order to enhance port isolation.

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